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| PA<br>PA<br>PA                         | Y PR      | YY<br>PF: | X PD     | Y P X        | YY<br>FT<br>TT<br>H                            | SO X      | XXXXX   | X D<br>X E       | X D      | X A       | RESI<br>ABQ<br>ID          | •          |                      |                    |          |                      |          | o                    | öο                 | )                    |          | <u>,</u> ດ (        | 000                     | 3                  | O  |  |                    |                    |                                       |          |          | O                        |             |
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| (BANY<br>(FURU/<br>(OGUR/              | 30-1      | 30-1      | 06-5     | W020         | Key<br>CDS                                     | Homo      | Human<br>cysti<br>respi                             | Human            | 24-S     | ABQ?      | ESULT 1<br>3Q73032<br>ABQ7 |            | 44                   | 4 4<br>3 Ω         | 4 1      | 4 0                  | ω.       | 36<br>37             | 354                | ω ω<br>• ω κ         | 3 2 3    | 29                  | 27                      | 2 S                | 23<br>24                                 | 22                                       | 20                 | 18                 | 16<br>17                              | 15       | 13       | 11<br>12                 | 10          |
| 000                                    | NOV-2000; | NOV-2001; | JUN-2002 | WO200244369- |  | o sapiens | an; chlori<br>tic fibros<br>piration;               | chlor            | SEP-2002 | ABQ73032; | 3032 s                     |            | 152.4                |                    |          | ∾ :-                 | . 42 ;   | 96.<br>19            | 96.                | 222.8                | 24       | , ω i               |                         | 33.                | $\circ$                                  | 602.8                                    |                    |                    |                                       |          |          |                          |             |
| BANYU PHARM<br>FURUKAWA T.<br>OGURA T. | 2000ЈР    | 2001WO-   |          | -A1.         | 7£<br>7£<br>7£                                 | ·         | ide<br>sis<br>gen                                   | ide chann        | (firs    |           | tandard;                   |            | 4.2                  |                    |          |                      |          |                      |                    |                      |          |                     |                         | •                  |  | 16.6                                     |                    |                    |                                       |          |          |                          |             |
| CO                                     | -0365     | Ю-ЈР10499 |          |              | Location/(<br>3892989<br>/*tag= a<br>/product= |           | channel; ClC-<br>transmembrane<br>e; ss.            | el               | t entry  |           | CDNA;                      |            | 14507<br>293         | (1) (1)            | 4.4      | W N                  | 270      | 485<br>194           | 485                | 493                  | 498      | 4 5 6<br>6 6<br>6 6 | 1 4 R<br>1 ω α<br>1 ω α | <u>~ (⊥)</u>       | (a) (a)                                  | 1811                                     | 4                  | a) (n)             | m ~                                   | 1 ~ 1 ~  | 1 -1     | ~1 L                     |             |
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|  |           |           |          |              | lliflers<br>Chloride channel protei            |           | -N3A; ClC-N3B; CFTR; cys<br>- conductance regulator | cDNA sequence SI |          |           | 3 BP.                      | ALIGNMENTS | ABA92370<br>AAQ61122 | AAK98343           | AAT73568 | ABQ73033<br>AAK98344 | ABQ73040 | AAK13522<br>ABO73039 | ABA32205           | ABA56738<br>AAI15005 | AAI24192 | AAK41584            | ABL67190                | AAC07377           | ABL09158<br>ABA15594                     | ABA08962.<br>AAK53376                    | ABL09159           | AAS78637           | AAS74440<br>AAS72071                  | AAS84089 | AAS69658 | AAC95406<br>AAS68176     | AAC95405    |
|  |           |           |          |              | n"   |           | ystic fibrosis;<br>or; ClC-3B;                      | ID NO:1.         |          |           | :                          |            | hamster<br>rain Expr | hamster<br>hamster | sion au  | chlori<br>hams       | hlori    | brain<br>chlor       | Probe #10671 for g | #4938                | .#141    | bone marrow         | d cancer                | Human secreted pro | Drosophila melanog<br>Human nervous syst | Human voltage gate<br>Human polynucleoti | Drosophila melanog | DNA encoding novel | DNA encoding novel DNA encoding novel | encoding | encoding | t flea HMT<br>A encoding | flea HMT VG |

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20-OCT-2000;
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19-JUL-2000;
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27-APR-2000;
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                                                                                                                                                                                                                                  Matches
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                                                                                                                                                                                                                                                                                                                                           used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                     anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Flea Malpighian tubule and head acids useful for the prevention,
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infestation; vaccine; antiparasitic
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TAATATTTACATATATGTA
                          TGAATCTCACAGATGAGGA
                                                                        GATATCCTCCGGCATATGGCCCAGACGGCAAACCAAGACCCCGCTTCAATAATGTTCAAC
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AAC95412 ID AAC9

AAC95412 standard;

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                                                                                                                                                                                                                              CC acids which are expressed in hindgut and Malphyhian tubule (HMT) tissue. The invention also relates to the correct encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the constructs, recombinant viruses and recombinant cells comprising the constructs, recombinant viruses and recombinant production of the proteins, can dispose the proteins, and compositions, recombinant production of the proteins of the proteins, and compositions comprising the inhibitors for candinistration to an animal. The nucleic acids, and the proteins they considered with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant collaring the cell to express the protein according to standard recombinant collaring the cell to express the nucleic acids into a host cell and collaring the cell to express the protein assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and continuousles, and in assays to identify modulators (agonists and HNC protein antibodies, and in assays to identify modulators (agonists and HNC continuousles) of HMT and/or HNC protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The CC downregulate protein expression and activity. The antibodies may also be used to such as diagnostic agents for detecting the presence of the polypeptides and activity and the invention.
                                                                                                                               Best Loc
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 941-942; 964pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea infestations -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APR-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             diagnosis; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cat flea; hindgut and Malpighian tubule nucleic acid;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cat flea HMT
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                                                       516 ATTCCTGGGATTGGGCAATATGATGATTTCCATACGATAGATTGGCAACGTGATATAGGC 575
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                                                                                                                               Local Similarity es 1417; Conser
2000-656323/63
DB; AAB29627.
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                                                                                                                                 Conservative
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                                                                                                                                                                                                     939 A;
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0; Mismatches
                                                                                                                             Score 877.8; DB 21;
Pred. No. 9.3e-126;
0; Mismatches 807;
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| 71           | 653 CTATTCAGCCAATGCGGGATTTCCAATTCTGATCCTTTGTGTGATT   |  |
|--------------|--|--|
| 1511         | 452 CTTTTTACAGACTGTGGTCCCCTGGAATCCTCTTCTCTT  |  |
| 1652         | 11 1111<br>593 GCAGTGA   |  |
| 59           | AATTTTCTAAACTAGGACAGTACCCCGTTGCAGAAGTTTTAGTTGTTGCTGTTGCAAC<br>CTGTGATAGCCTTTCCGTAATCCATACACTTGCAAAACACCAATTCAACTGAATCAAACA   |  |
| 1391         | 332 AAGTCCACGAAATTTGGAAAGTATCCCGTTCTGGAAGTCATTATTGTTGCAGCCAT   |  |
| 1331<br>1532 | 1272 TTTGGAGGCTTTTGGGGAGCCTTTTTCATTAGGGCAAATATTGCCTGGTGTCGTCGACGC  |  |
| 1271         | 4 4  |  |
| 4 1          | 12 SCIEGALITISTILISMS ICCALIMATICALITISTIACACCETTISTICALITICALI |  |
| اس د         | 293 GAGGIGAGCIACIATITUCCATIGAAGACCTTATEGAGATCATICTTCTTCTTGAT   |  |
| 15           | 092 GAGGTTAGCTATTATTTTCCTCTCAAAACTTTATGGAGATCATTTTTTTGCTGCTTTAGT   |  |
| 1091<br>1292 | 1032 GCTGCAGGGGTTTCTGTAGCTTTTGGTGCACCAATTGGAGĠAGTTCTTTTTAGCCTGGAA  |  |
| 1232         | 73 TTATTTC   |  |
| .17          | 13 TTGGGTAAAGAAGGTCCTATGGTACACATTGCCAGCTGTATAGGTAATATATTGTCTT  |  |
| 971          | GGAAAAGAAGGTCCCCTGGTACATGTTGCCTGTTGCTGCGGAAATATCTTTTCC   |  |
| 911<br>1112  | 852 AAATGGACTTTAATGATTAAAACCATCACATTÄGTCCTGGCTGTGGCATCAGGTTTGAGT   |  |
| 851<br>1052  | 792 TCTGGAATTCCAGAGATTAAAACTATTTTAAGTGGATTCATCATCAGAGGTTACTTGGGA   |  |
| 791<br>992   | 732 TIGACTITICCCTITCTICCAGITITCCCTGGTAAAGGTATTTGCTCCATATGCCTGTGGC  |  |
| ū            | 73 CAACCTAGAACTGGGGCGGGGCTTACATAATTGCTTATTTGTTTTATATTAGTTTGGGC   |  |
| 731          | TCCTGGTTCTTATATCATGAACTACATAATGTACATCTTCTGGG   |  |
| 671<br>872   | 612 ACAACATTTGAAGAGAGGGATAAATGTCCACAGTGGAAAACATGGGCAGAATTAATCATA   |  |
| 611<br>815   | 552 GGCATTTGCCTTAGTGCGTTGTGGTACAACCACGAACAGTGCTGTTGGGGATCTAATGAA   |  |
| 551<br>755   | 92 TCAGGGGCACTGGCCGATTAATAGACATTGCTGCCGATTGGATGACTG.   |  |
| 491<br>695   | 432 ACAAAAAGTTTGTATGATGCTGGTCAGGATGGCTAGTAGTAACACTAACAGGATTGGCA  |  |
| 635          | 76 AGAGATCGAATGAGACATCGATATATTGTTAAAAAACGACAAGACTCTATACTI  |  |

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| 1512 AATGCCAGTAAAATTGTGGATGACATTCCTGATCGATCCAGAGGG 1713 ACTGATGTTAAATCAGCTATAGAAATAGCAGCCAGCTGGT 1713 ACTGATGTTAAATCAGCTATAGAAATAGCAGCAGCTGGT 1713 ACTGATGTTAAATCAGCTATAGAAATAGCAGCAGCTGGT 1714   | CAAT              |  |   |
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| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGC 1713 ACTGATGTTAAAATCCAGCTATAGAAATCAGCAGACCAGCTGGT 1713 ACTGATGTTAAAATCCAGCTATAGAAATCAGCACAGCTGGT 1714 ACTGATGTTAAAATCAGCTTATAGAAATCAGCACAGCTGGT 1715 ACTGATGTGAAAATCACATTATGCCTGATTGTTATGCCCAGCATTGCATTATGCAGTTTGTTT   | AAA<br>AAA<br>AAA | 412 GGACTGAGGCAGTGCCTTGTAACTCACAATGGGCGCCTCCTTGGCATTATAACAAAA          |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA 1713 ACTGATGTAAATTGTCGATGACAGTACCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCA   | OTA               | 352 CCTTTTACAGTGACAGACCACACCCCAATGGAGATTGTGGGGGATATTTTCCGAAAG(         |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGACAGCAGGACAGCAGTAAAATTGACCAGTCAATACAGCAGCAGCAGCAGCAGCAGCAGCAGAGAGAATTAAAATCAGCAGTATAAAATCAACAATTGACAATTGAAATCAACAATTGAAATCAACAATTGAAATCAACAATTGACAATTGAAATCAACAATTGAAATCAACAATTGAAATCAACAATTGAAATCAACAATTGAAATCAACAATTGAAATCAACAATTGAAATTGAAAATCAACAATTGAACAATTGAAAATTGAACAATTGAATTAATT | AGC               | 292 CCATCTCTTCCAGCAGAAAGTCCTCGGCCATTGAAGCTTCGAAGCATTCTTGACATG          |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA  | 8 – 3             | 232 GCCAGGAAAAAACAAGAAGGTATCGTTGGCAGTTCTCGGGTGTGTTTTGCACAGC            |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA  | 2 _ 9             | 172 GAATCTCAGAGATTAGTGGGATTTGCCCTCAGAAGAGACCTGACAATTGCAATAGA/          |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA  | £3 ≥              | 112 G<br>304 G   |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA  | 2 - 2             | 052 AGACCTCGAAGGAATGATCC<br>             <br> 247 CAACCGAAGAGGAATGAAAC |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGC  | 2 - 2             | 992 TACCCTTTCTTGGATGCAAAAGAAGAATTCACTCATACCACCCTGGCTGCTGACGT<br>       |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGA  | S – S             | 932 TGGGTTGGAGATGCCTTTGGCAGGGAAGGCATTTATGAAGCACACATCCGATTAAA<br>       |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGC  | \$-\$             | 872 GAGCTTACTGGAGGCTTGGAATATATTGTTCCCCTTATGGCTGCAGTCATGACCAGT          |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGC  |                   | 812 GCTGCTGCATGCTTAGGTGGTGTGACAAGAATGACTGTCTCCCCTGGTGGTTATTGT          |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGC  | ğ – ğ             | 752 AAGGAGTGGTGAGGTCGGGGCTGATTGCATTACACCTGGCCTTTATGCCATGGTTG           |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGCAGTGAGATATATT  | 7-7               | 692 ÀGGATTGTGGGGATTGCGGTGGAGCAGCTTGCCTACTATCACCI                       | • |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGCATTGGAGTATI   | G – G             | 632 GGCATCAAGGTTCCATCAGGCTTGTTCATCCCCAGCATGGCCATTGGAGCGATCGCAG<br>     |   |
| 1512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGCATTGGAGTATATT   | 4-4               | 572 GCTATATGGCAGTTATGCCTGGCACTCATATTTAAAATCATAATGACAGTATTCAC<br>       |   |
|   | AG                | 512 AATGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGCATTGGAGTATATT         |   |

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RESULT 5
AAC95413
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                                                                                                                                                                                                                                                      administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant DNA methodology by inserting the nucleic acids into a host cell and culturing the cell to express the protein. The HMT and HNC nucleic acids may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HNC rectains who because in the proteins and their role in metabolism. The HMT and HNC rectains who because in the proteins and their role in metabolism.
                                                                                                         anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                    proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/or HNC protein expression and activity. The
                                                                                                                                                                                                                                                                                                                                                                                                                                              constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Flea Malpighian tubule and head and nerve cord acids useful for the prevention, diagnosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-656323/63
P-PSDB; AAB29627.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic
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1407; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ention relates to novel cat flea (Ctenocephalides felis) nucleic hich are expressed in hindgut and Malpighian tubule (HMT) tissue and nerve cord (HNC) tissue. The invention also relates to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proteins. The invention additionally encompasses expression
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Page 942-943; 964pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAATCTCAGAGATTAGTGGGATTTGCCCTCAGAAGAGACCTGACAATTGCAATAGAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATATAGAAAACATGATTAATGAAACCAGCTACAATGGATTTTCCTGTCATAATGTCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCCAAGAGGAATGA---AACATTAAGTGTAATCACTCAAGACTCGATGACTGTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACCTCGAAGGAATGATCCTCCCTTAGCTGTCCTGACACAGGACAATATGACAGTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACCCTTTCTTGGATGCAAAAGAAGAATTCACTCATACCACCCTGGCTGCTGACGTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGCTTACTGGAGCCTTGGAATATATTGTTCCCCCTTATGGCCTGCAGTCATGACCAGTAAA 1931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCTGCATGCTTAGGTGGTGTGACAAGAATGACTGTCTCCCTGGTGGTTATTGTTTTT 1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGATTGTGGGGATTGCGGTGGAGCAGCTTGCCTACTATCACCACGACTGGTTTATCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTATGAAAGTACCATGTGGTCTGTTTATCCCAAGTTTATGCCTAGGAGCTATTATGGGT 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCATCAAGGTTCCATCAGGCTTGTTCATCCCCCAGCATGGCCATTGGAGCGATCGCAGGA 169
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                                                                                                                                                                                   CCAATAACAGTGACTGATCAAACACCAATGGAAACTGTGGTGGATATGTTTAGAAAACTA
                                                                                                                                                                                                                                                                             CCTACAGTGCAAAGTTTAGGACCTCCACCTTTGAAACTAAAGAAAATATTAGATATGGCT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTTGAAGGTTTACTGAAAGAAACTGAGCACAATGGATATCCAGTTGTTTCCAGA
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GATGTTTTACGACATGTAAAACAAATGGATAATGAAGATCCTAATAGTATACTTTTTAA
                                                                                         GGTTTACGTCAGACATTAGTCACACACAATGGGCGTTTGCTCGGTGTTATAACTAAAAAA
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                                                       CC antibodies against the proteins, a method of identifying inhibitors of CC the proteins, and compositions comprising the inhibitors for CC administration to an animal. The nucleic acids, and the proteins they CC encode may be used in the prevention, treatment and diagnosis of diseases CC associated with flea infestations. For example, the nucleic acids may be CC used to produce an HMT or HMC protein according to standard recombinant CC DNA methodology by inserting the nucleic acids into a host cell and CC culturing the cell to express the protein. The HMT and HNC nucleic acids CC may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect CC and quantitate the presence of cat flea or other homologous nucleic acid CC sequences in samples. They may also be used to study the expression and CC function of the proteins and their role in metabolism. The HMT and HNC CC antibodies, and in assays to identify modulators (agonists and activity. The antibodies may also be used to a sufficient expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodice against the proteins, antibodice against the proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cat flea
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 944; 964pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-656323/63
P-PSDB; AAB29627.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19-FEB-2001
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|--|---------------------------------|-----------------------------------|--|----------------------------------|---|--|--|---|---------------------------------------|---|---|---|---|--|--|-----------------------------------|---|--------------------------------------|
| 1392<br>1128   | 1332<br>1188                    | 1272<br>1248                      | 1212<br>1308   | 1152<br>1368                     | 1092<br>1428  | 1032<br>1488   | 972<br>1 <b>54</b> 8   | 912<br>1608                               | 852<br>1668                           | 792<br>1728   | 732<br>1788                             | 672<br>1848   | 612<br>1905   | 552<br>1965  |  | 432<br>2085                       | 372<br>2145                             | 2205                                 |
| GCTGTGATAGCCTTCCCTAATCCATACACTAGGCTAAACACCAGTGAACTGATCAAAGAG 1<br> | AGTCATTATTGTTGCAGCCATTACT 1<br> | TAGGGCAAATATTGCCTGGTGTCGTCGACGC 1 | GTGGAGTATCATACACCATGGTACCTTTTTGAACTGTTTCCTTTTATTCTTCTAGGGGTA 1 | ATTTGGTAACAGCCGTCTGGTCCTTTTTAT 1 | GAGGTTAGCTATTATTTCCCTCCAAAACTTTATGGAGATCATTTTTTGCTGCTTTAGTG 1<br> | GCTGCAGGGGTTTCTGTAGCTTTTGGTGCACCAATTGGAGGAGTTCTTTTTAGCCTGGAA 1<br> | CTCTTTCCAAAGTATAGCACAAACGAAAGCTAAAAAAAAGGGAGGTGCTATCAGCTGCCTCA 1 | TTAGGAAAAGAAGGTCCCCTGGTACATGTTGCCTGCTTGCT | TCACATTAGTCCTGGCTGTGGCATCAGGTTTGAGT 9 | AAGTGGATTCATCAGAGGTTACTTGGGA 8<br>                                      <br>GAGTGGTTTCATCATCAGAGGATATCTTGGA 1 | FTCCCTGGTAAAGGTATTTGCTCCATATGCCTGTGGC 7 | CAGAGGGTCCTGGTTCTTATATCATGAACTACATAATGTACATCTTCTGGGCC 7 | ACAACATTTGAAGAGAGGGATAAATGTCCACAGTGGGAAAACATGGGCAGAATTAATCATA 6 | ACGAACAGTGCTGTTGGGGATCTAATGAA 6<br>                         <br> | GACATTGCTGCCGATTGGATGACTGACCTAAAGGAG 5 | CTAGTAGTAACACTAACAGGATTGGCA 4<br> | GATCAACAGCAAAAAGAATGAGCATGGGAAATG 4<br> | TTTCCATACGATAGATTGGCAACGTGATATAGCC 2 |
| 451<br>069   |                                 | 331<br>189                        | 271<br>249   | 211<br>309                       | 151<br>369  | 091<br>429   | 031<br>489   | 71<br>549                                 | 11                                    | 51<br>669   | 91<br>729                               | 31<br>789   | 71<br>849   | 11<br>906  | 51<br>966                              | 91<br>026                         | 31<br>086                               | 146                                  |
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| 24/2 GATATICEICUGUATATIGGUCUAGAGUGUAGAGUCUGUTTUGATAATGITUGA 2330   | B 5 |
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| ATO CARTAROCURATA REPORTO CONTRACTOR CARTACON AND CARTACO | ?   |
| 2412 GGACTGAGGCAGTGCCTTGTAACTCACAATGGGCGCCTCCTTGGCATTATAACAAAAAAA 2471   | Ф   |
| 180 CCAATAACAGTGACTGAACAACACCAATGGAAACTGTGGTGGATATGTTTAGAAAACTA 121  | рb  |
| CTTTTACAGTGAC  | Qy  |
| 240 CCTACAGTGCAAAGTTTAGGACCTCCACCTTTGAAACTAAAGAAAATATTAGATATGGCT 181   | Db  |
| CATCTCTTCCAGCAGAAAG  | Qy  |
|  | Db  |
| CCAGGAAAAACAAGAAGGTATCGTTGGCAGTTCTCGGGTGTGTTTTGCACAC   | Qy  |
| 357 GAATCTCAGTATCTTGTTGGATTTGTTTTGAGGAGGGACTTAAATCTAGCCATAGCCAAT 298   | Db  |
| AATCTCAGAGATTAGTGGGATTTGCCCTCAGAAGAGACCTGACAATTGCAATAGAA   | Qy  |
| 417 GATGTTGAAGGTTTACTGAAAGAAACTGAGCACAATGGATATCCAGTTGTTTCTAGA 358  | Дb  |
| ATATAGAAAACATGATTAATGAAACCAGCTACAATGGATTTCCTGTCATAA  | Qy  |
| 474 CAACCCAAGAGGAATGAAACATTAAGTGTAATCACTCAAGACTCGATGACTGTGGAT 418  | Дb  |
| ARTGATCCTCCCTTAGCTGTCCTGACACAGGACAATATGAG  | Qy  |
| 534 TATCCATTCTTGGACAGTAAAGATGAATTTGCACATACAT   | DЪ  |
| ACCCTTTCTTGGATGCAAAAGAAGAATTCACTCATACCACCCTGGCTGCTG  | Qy  |
| 594 TGGGTTGGTGATGCTTTGGGCAGACAGGGTATATATGATGCCCATATACAGCTTAATGGA 535   | Db  |
| GGGTTGGAGATGCCTTTGGCAGGGAAGGCATTTATGAAGCACACACCCGATTAAATGG   | Qy  |
| 654 GAACTGACTGGTGTATAGGTTATATCGTGCCCTTAATGGCAGCAGCTATGGCTTCCAAA 595  | Db  |
| AGCTTACTGGAGGCTTGGAATATATTGTTCCCCCTTATGGCTGCAGTCATGACCAGT  | Qy  |
| 714 GCTGCAGCTGTTTTAGGTGGTGTCACTAGAATGACAGTTTCTCTGGTGGTAATAATGTTT 655   | DЬ  |
| CTGCTGCATGCTTAGGTGGTGTGACAAGAATGACTGTCTCCCTGGTGGTTATTC   | Qy  |
| 774 TCTGGTGAATGCTCAACTGGAGACAATTGCATCACACCGGGCCTGTATGCTATGGTGGGC 715   | Db  |
| ACCTGGCCTTTATGC  | Qy  |
| 834 AGAATTGTGGGCATTGGAATTGAACAATTGGCTTACTATTATCCAAAATTATGGTTCTTT 775   | Db  |
| 1692 AGGATTGTGGGGATTGCGGTGGAGCAGCTTGCCTACTATCACCACGACTGGTTTATCTTT 1751   | Qy  |
| 894 GGTATGAAAGTACCATGTGGTCTGTTTATCCCCAAGTTTTATGCCTAGGAGCTATTATGGGT 835   | Db  |
| GCATCAAGGTTCCATCAGGCTTGTTCATCCCCAGCATGGCCATTGGAGC  | Qy  |
| 954 GCTGTGTGCTCCTGATTGCTTTGGTACTGAAATTGGGAATGACTGTATTTACCTTT 895   | Дb  |
| - O  | Qy  |
| 1008 ACTGATGTTAAATCAGCTATAGAAATAGCAGCAGCTGGTCCTGGTGTCTACCAG 955  | Db  |
| TGCCAGTAAAATTGTCGATGACATTCCTGATCGTCCAGCAGGCATTGGAG   | Qy  |
| 1068 CTATTCAGCCAATGCGGGATTTCCAATTCTGATCCTTTGTGTGAGTACAATCGCAATTTC 1009   | DЬ  |
| TTTTTACAGACTGTGGTCCCCTGGAATCCTCTTCTCTTTGTGACT  | Qy  |

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                                                                                                                                           CC antibodies against the proteins, recomprising the inhibitors of the proteins, and compositions comprising the inhibitors for CC administration to an animal. The nucleic acids, and the proteins they CC encode may be used in the prevention, treatment and diagnosts of diseases CC associated with flea infestations. For example, the nucleic acids may be C used to produce an HMT or HMC protein according to standard recombinant CC DNA methodology by inserting the nucleic acids into a host cell and CC culturing the cell to express the protein according to standard recombinant CC DNA methodology by inserting the nucleic acids into a host cell and CC culturing the cell to express the protein. The HMT and HNC nucleic acids CC may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid Sequences in samples. They may also be used to study the expression and CC function of the proteins and their role in metabolism. The HMT and HNC CC antibodies, and in assays to identify modulators (agonists and activity. The antibodies and antibodies and antibodies and activity. The antibodies may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The
                                                                   Query Match
Best Local
                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                    constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, a method of identifying inhibitors of
                                                                                                                                                                                                                                                                                                                                                                                                                                            acids which are expressed in hindgut and Malpighian tubule (HMT) ti
or head and nerve cord (HNC) tissue. The invention also relates to
encoded proteins. The invention additionally encompasses expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to novel cat flea (Ctenocephalides felis) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brandt KS, Gaines PJ,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic
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               ATTCCTGGGATTGGGCAATATGATGATTTCCATACGATAGATTGGCAACGTGATATAGCC 104
                                                                     Similarity
                                                                                                                                       sequence represents a cat flea HMT cDNA of the
                                                                                                             1968 BP;
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                                                     Conservative
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                                                      diagnosis; detection; ss.
                                                                   Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic
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                                                                                                                         Cat flea HMT VG Cl channel-like cDNA complement,
                                                                                                                                                             19-FEB-2001
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ATAAAGGGTGCCCATGATGCCTGGTCAGGTTGGGTGTGTTCTCCTAGTCGGGCTGGTG

Query Match
Best Local Similarity

Matches 1238;

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Gaps

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GGCATTTGCCTTAGTGCGTTGTGGTACAACCACGAACAGTGCTGTTGGGGATCTAATGAA 611

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cc nucleic acids of the invention, recombinant production of the proteins, cc antibodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for ct the proteins, and compositions comprising the inhibitors for comprising the inhibitors for compression and the proteins they come administration to an animal. The nucleic acids, and the proteins they come associated with flea infestations, treatment and diagnosis of diseases considered with flea infestations, treatment and diagnosis of diseases considered with flea infestations, treatment and diagnosis may be used to produce an HMT or HMC protein according to standard recombinant containing the cell to express the nucleic acids into a host cell and continuing the cell to express the protein. The HMT and HNC nucleic acids contained the used as an animal contains, and the expression and continuing the cell to express the protein acid sequences in samples. They may also be used to study the expression and continuing the proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and antagonists) of HMT and/or HMC protein expression and activity. The
                                                                                                                                           anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HNC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression constructs, recombinant viruses and recombinant cells comprising the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acids useful infestations
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                                                                         Sequence 1968 BP; 639 A; 481 C; 329 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to novel cat flea (Ctenocephalides felis) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Page 931-932; 964pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-APR-1999;
                                                                                                                       present sequence represents a cat flea HMT cDNA of the invention
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  DB 21;
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                      Length 1968;
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AGGATTGTGGGGGATTGCGGTGGAGCAGCTTGCCTACTATCACCACGACTGGTTTATCTTT 1751
                                                                                                    GCTGTGTGCTTGCTTGCTTTGGTACTGAAATTGGGAATGACTGTATTTACCTTT
                                                                                                                                                                     ACTGATGTTAAATCAGCTATAGAAATAGCAG-----CAGCTGGTCCTGGTGTCTACCAG
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therapeutic; ds.
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     (GENO-) GENOPTERA LLC
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                                                                                                                                                                                                                                                                                                                                                          "Chloride channel (dmCLC) protein'
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Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The patent discloses invertebrate receptor nucleic acids and proteins isolated from Drosophila melanogaster. The sequences of the present invention are used to genetically modify metazoan invertebrate organisms such as insects and worms, resulting in the expression or mis-expression of the receptor protein. The nucleic acid molecules of the invention are used as hybridisation probes, in expression vectors and to modify a host cell or animal and therefore provide new means of providing biopesticides. The genetically modified organisms are used in screening assays to identify compounds that are potential pesticidal agents or therapeutics that interact with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Invertebrate receptor nucleic acids isolated from Drosophila melanogaster which can be used to genetically modify metazoan invertebrate organisms resulting in expression or mis-expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ebens AJ,
Torpey J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3366 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receptor proteins.
The present sequence is a DNA encoding chloride channel (dmCLC) protein.
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                        TGATTAAAACCATCACATTAGTCCTGGCTGTGGCATCAGGTTTGAGTTTAGGAAAAGAAG
                                                                                                                                                                                                                                                                                    GTCCTGGTTCTTATATCATGAACTACATAATGTACATCTTCTGGGCCTTGAGTTTTTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCGTTGTGGTACAACCACGAACAGTGCTGTTGGGGATCTAATGAAACAACATTTGAAG
                                                                                                      AGATTAAAACTATTTTAAGTGGATTCATCATCAGAGGTTACTTGGGAAAATGGACTTTAA
                                                                                                                                                                                             TTCTTGCAGTTTCCCTGGTAAAGGTATTTGCTCCATATGCCTGTGGCCTCTGGAATTCCAG
                                                                                                                                                                                                                                                           GCACCGGACCATATATCGTCGCTTACATCTGGTATGTGCTGTGGGCCTTTGCTTTTTGCTT
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DB; AAE02339.
                                                                                                                                                                     CGCTCAGCGCCTCCCTTGTGCGAATGTTTGCGCCCTACGCCTGCGGATCTGGTATTCCCG
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                                                                                AGATAAAGACCATCTTGTCTGGCTTCATTATACGCGGCTATCTAGGAAAGTGGACGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 69-70;
                                                                                                                                                                                                                                                                                                                                              AGGCAACTGCTCGACGTGGAAAACCTGGCCAGAGATCTTTGGTTTGGATCGAAATG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                743 C; 843 G;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
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                            CCTTTGGCAGGGAAGGCATTTATGAAGCACACACCGATTAAATGGATACCCTTTCTTGG
                                                                           GCTTGGAATATTGTTCCCCTTATGGCTGCAGTCATGACCAGTAAATGGGTTGGAGATG
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CTCTGGGCAGGCAAGGTATCTACGATGCGCACATTGCGCTGAATGGTTATCCGTTCCTAG
                                                           TGGGAGGTGTCACTCGAATGACCGTCTCCCTGGTAGTGATAATGTTCGAGCTAACAGGCG
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Flea Malpighian tubule and head and nerve cord acids useful for the prevention, diagnosis and % \left( 1\right) =\left\{ 1\right\} 
                                                                                                                                                                                                                                                                                            Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic
                                                                                                                                                                                                                                                                                                                                          Cat flea HMT VG
                                                WPI; 2000-656323/63.
                                                                                                                                                               07-APR-2000; 2000WO-US09437
                                                                                                                                                                                                                                                   Ctenocephalides felis
                                                                                                                                                                                                                                                                              diagnosis; detection; ss.
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                                                                                                                                                                                                                                                                                                                                       Cl channel-like partial cDNA, SEQ ID NO:1908
                                                                            Stinchcomb
                                                                                                                                                                                                                                                                                            antiparasitic; therapeutic
                                                                          DT,
                                                                          Wisnewski
    tissue derived nucleic treatment of flea
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nucleic acids of the invention, recombinant production of the proteins, can nitbodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for administration to an animal. The nucleic acids, and the proteins they can associated with flea infestations for example, the nucleic acids may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HMC protein according to standard recombinant CC used to produce an HMT or HMC protein according to standard recombinant CC used to produce an HMT or HMC protein according to standard recombinant CC used to produce an HMT or HMC protein. The HMT and HMC nucleic acids coulturing the cell to express the protein. The HMT and HMC nucleic acid sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HMC proteins may be used as antispens in the production of specific antispens, and in assays to identify modulators (agonists and antisponists) of HMT and/or HMC protein expression and activity. The
                                                          anti-HMT/HNC protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The present sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The 'Invention relates to novel cat flea (Ctenocephalides felis) nucleic actions which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    constructs, recombinant viruses and recombinant cells comprising the
Sequence 2191 BP; 661 A; 327 C; 455 G; 748 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Page 928-929; 964pp; English.
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Matches 1163; Query Match Best Local Similarity 1155 1035 1095 481 421 361 301 241 975 181 915 121 855 795 735 61 1 GAGTATCATACACCATGGTACCTTTTTGAACTGTTTCCTTTTTATTCTTCTAGGGGTATTT GCATTTGTTTTGAGGTCCATCAATCCATTTGGTAACAGCCGTCTGGTCCTTTTTTATGTG GCTGGTGTATCTGTTGCATTTGGAGCACCTATTGGAGGTGTGCTTTTCAGTTTGGAAGAG AGTITIGCCTITCTIGCAGITICCCTGGIAAAGGTATITGCTCCATAIGCCTGIGGCTCT 794 GTTAGCTATTATTTCCTCTCAAAACTTTATGGAGATCATTTTTTGCTGCTTTAGTGGCT 1154 TTTCCAAAGTATAGCACAAACGAAGCTAAAAAAAAGGGAGGTGCTATCAGCTGCCTCAGCT 1034 GGAAAAGAAGGTCCCCTGGTACATGTTGCCTGTTGCTGCGGAAATATCTTTTCCTACCTC 974 GGAATTCCAGAGATTAAAACTATTTTAAGTGGATTCATCATCAGAGGTTACTTGGGAAAA 854 ATTTTTGCTTCTTTGGCAGCCTCTTTGGTGCGCATGTTTGCACCTTATGCTTGTGGGTCA 60 GCTTTCATATTGCGATCCATAAATCCATTTGGAAATGAGCACTCTGTCCTTTTCTATGTG GTGAGCTACTATTTCCCCATTGAAGACCTTATGGAGATCATTCTTCTGTGCTTTGATAGCA GCAGGGGTTTCTGTAGCTTTTGGTGCACCAATTGGAGGAGTTCTTTTTAGCCTGGAAGAG 1094 GGTAAAGAAGGTCCTATGGTACACATTGCCAGCTGTATAGGTAATATTGTCTTATTTA TGGACATTGATTATTAAAAGTGTAGGAATCATGTTGTCTGTATCAGCTGGATTGAGTTTG TGGACTTTAATGATTAAAACCATCACATTAGTCCTGGCTGTGGCATCAGGTTTGAGTTTA 914 GGTATACCAGAGATTAAAACCATTCTGAGTGGTTTCATCATCAGAGGATATCTTGGAAAA TTTCCTAAATATGGTCGGAATGAAGCAAAGAAACGAGAGATTTTATCAGCAGCTGCAGCA 300 Conservative 20.3%; 0; Score 736.4; DB 21; Pred. No. 4e-104; Mismatches 641; Indels Length 12; Gaps 1274 180 120 240 480 ω ••

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                                             TCTCTTCCAGCAGAAAGTCCTCGGCCATTGAAGCTTCGAAGCATTCTTGACATGAGCCCT
                                                                                                                                                                                                                                                                                                                                                           ATAGAAAACATGATTAATGAAACCAGCTACAATGGATTTCCTGTCATAATGTCAAAAGAA
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                                                                                                AGACGCATGATCGATGGGATAACAGGACAAAGTTTGGTACTTTTCATA---AATGGCCCT
                                                                                                                                                AGGAAAAAACAAGAAGGTATCGTTGGCAGTTCTCGGGTGTGTTTTGCACAGCACACCCCA
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CC nucleic acids of the invention, recombinant production of the proteins, antibodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for administration to an animal. The nucleic acids, and the proteins they associated with flea infestations. For example, the nucleic acids may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant CC used to produce an HMT or HNC protein according to standard recombinant CC used to produce an HMT or HNC protein. The HMT and HNC nucleic acids and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and function of the proteins and their role in metabolism. The HMT and HNC proteins may be used as antigens in the production of specific antibodies, and in assays to identify modulators (agonists and activity. The
                                                                                                                                                                                                                                                                                            The invention relates to novel cat flea (Ctenocephalides fells) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cat flea; hindgut and Malpighian tubule nucleic acid; flea infestation; vaccine; antiparasitic; therapeutic diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Flea Malpighian tubule and head and acids useful for the prevention, dia
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                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 929-930; 964pp; English
                                                                                                                                                                                                                                                                                constructs, recombinant viruses and recombinant cells comprising the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pti-HMT/HNC protein antibodies and antagonists may also be used to www.regulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The resent sequence represents a cat flea HMT cDNA of the invention.
                                                                                                                                                                                                                                                                                                                               TCCACGAAATTTGGAAAGTATCCCGTTCTGGAAGTCATTATTGTTGCAGCCATTACTGCT
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ACCCTTTCTTGGATGCAAAAGAAGAATTCACTCATACCACCCTGGCTGCTGACGTTATGA
                                                           GGGTTGGAGATGCCTTTGGCAGGGAAGGCATTTATGAAGCACACATCCGATTAAATGGAT
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                         New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity -
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   Claim 1;
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23-AUG-2000; 2000US-0649167
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upplement; medical imaging; diagnostic; genetic 
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103pp;
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cc (II). (II) is useful for generating antibodies against it, detecting or cc quantitating a polypeptide in tissue, as molecular weight markers and as cc a food supplement. (II) and its binding partners are useful in medical c imaging of sites expressing (II). (I) and (II) are useful in medical considered involving aberrant protein expression or biological activity. CC The polypeptide and polynucleotide sequences have applications in cc diagnostics, forensics, gene mapping, identification of mutations considered for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and canno acid sequences. AAS64197-AAS94564 represent novel human considered diagnostic coding sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at figure in the printed considered in the printed considered in the produces.
polynucleotides are also used in diagnostics as expressed sequence for identifying expressed genes. (I) is useful in gene therapy tecleor restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states involved to restore normal activity of (II) or to treat disease states activity of (II) or to treat disease states activity or to treat disease activity or to treat dise
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4794 BP; 1655 A; 1089 C; 960 G; 1090 T; 0 other;

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QΥ QУ Вþ Qy В δ 밁 QΥ Вþ Q 밁 QУ Вb Qy DЬ Qγ Вþ Qy 밁 В δÃ Hest Local Similarity 64.28; Matches 1194; Conservation 3356 3176 1033 3296 3236 3116 GGCACCGAGAGGGAGCCTTTGCCTACATAGTCAATTATTTCATGTACGTCCTCTGGGCTC 913 793 673 GTCAAGCAGAGGGTCCTGGTTCTTATATCATGAACTACATAATGTACATCTTCTGGGCCT CTGGAATCCCTGAGATAAAAACTATCTTGAGTGGTTTCATTATTAGGGGGCTATTTGGGTA 3295 TTGGAGGGCTTTGGGGAGCCTTTTTCATTAGGGCAAATATTGCCTGGTGTCGTCGACGCA 1332 TGGAGTATCATACACCATGGTACCTTTTTGAACTGTTTCCTTTTATTCTTCTAGGGGTAT CTGCATTTGTTTTGAGGTCCATCAATCCATTTGGTAACAGCCGTCTGGTCCTTTTTTATG TAGGAAAAGAAGGTCCCCTGGTACATGTTGCCTGTTGCTGCGGAAATATCTTTTCCTACC AATGGACTTTAATGATTAAAACCATCACATTAGTCCTGGCTGTGGCATCAGGTTTGAGTT CTGGAATTCCAGAGATTAAAACTATTTTAAGTGGATTCATCAGAGGTTACTTGGGAA 852 CTGCAGGGGTTTCTGTAGCTTTTGGTGCACCAATTGGAGGAGTTCTTTTTAGCCTGGAAG GCTTCAACAAATACAGGAAGAATGAAGCCAAGCGCAGAGAGGTCTTGTCGGCTGCAGCAG AGTGGACTCTGGTTATCAAAACCATCACCTTGGTGCTGGCAGTGTCGTCTGGCCTTGAGCC TCCTATTTGCCTTCCTTGCCGTATCTCTTGTCAAGGTGTTTGCGCCCTTATGCCTGTGGCCT TGAGTTTTGCCTTTCTTGCAGTTTCCCTGGTAAAGGTATTTGCTCCATATGCCTGTGGCT 792 CAGCATTCACTCTACGCTCCATCAATCCATTTGGGAACAGCCGCCTGGTACTATTTTATG TGGGCAAAGAGGGCCCTCTAGTGCACGTGGCTTGCTGCTGTGGGAACATCCTGTGCCACT 3415 0; Score 701.2; DB 23; Pred. No. 9.7e-99; 0; Mismatches 483; Indels 183; Length Gaps 1272 1032 3235 3655 1212 3535 972 3175 1092

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                                                     CCTTCACTGTGACTGACCTTACACCCATGGAGATCGTAGTGGATATTTTCCGAAAGCTGG
                                                                                                                                                    CTCCATTGCCACCATACACTCCACCCACTCTAAAGCTTCGGAACATCCTCGATCTCAGCC
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Query Match Best Local Similarity Matches 1194; Conserv

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                                                    The invention relates to isolated polynucleotide (I) and C polypeptide (II) sequences. (I) is useful as hybridisation probes, CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags CC for identifying expressed genes. (I) is useful in gene therapy techniques CC (II). (II) is useful for generating antibodies against it, detecting or CC quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical CC imaging of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. The polypeptide and polypucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations CC responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and CC and no acid sequences. AAS64197-AAS94564 represent novel human CC case for which intends the sequences of the invention.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide and encoded polypeptides, useful diagnostics, forensics, gene mapping, identification of mutat responsible for genetic disorders or other traits and to assemble the disorders or other traits.
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DNA encoding novel human diagnostic protein #19893

Human; chromosome mapping; gene mapping; gene therapy; food supplement; medical imaging; diagnostic; genetic c disorder; forensic;

SS

sapiens

WO200175067-A2

11-OCT-2001

30-MAR-2001; 2001WO-US08631

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CC Note: The sequence data for this patent did not appear in the printed constituation, but was obtained in electronic format directly from WIPO at the wino intention, but was obtained in electronic format directly from WIPO at the wino intention, but was obtained in electronic format directly from WIPO at the wino intention, but has obtained in electronic format directly from WIPO at the wino intention in the printed content wino intention in the printed content wino intention in the printed content wino intention in the printed of the invention.
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                    CTGCAGGGGTTTCTGTAGCCTTTTGGTGCACCAATTGGAGGAGTTCTTTTTAGCCTGGAAG
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                                                                                                                              ACCCTTTCTTGGATGCAAAAGAAGTTCACTCATACCACCCTGGCTGACGTTATGA
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                                                          AACCCCGGAGAAATGATCCTTTGTTGACTGTCCTTACTCAGGACAGTATGACTGTGGAAG
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|------|--|------|----|
| 2532 |  | 2473 | VΩ |
| 4732 | GACTGCGGCAGTGCCTGGTTACACACACACGGGCGATTGCTTGGAATCATTACCAAAAAGG          | 4673 | ф  |
| 2472 | GACTGAGGCAGTGCCTTGTAACTCACAATGGGCGCCTCCTTGGCATTATAACAAAAAAG            | 2413 | Qγ |
| 4672 | CCTTCACTGTGACTGACCTTACACCCATGGAGATCGTAGTGGATATTTTCCGAAAGCTGG           | 4613 | Вb |
| 2412 | CTTTTACAGTGACAGACCACACCCCAATGGAGATTGTGGTGGATATTTTCCGGAAAGCCTGG         | 2353 | Qγ |
| 4612 | 4553 CTCCATTGCCACCATACACTCCACCCACTCTAAAGCTTCGGAACATCCTCGATCTCAGCC      | 4553 | Db |
| 2352 |  | 2293 | δ  |
| 4552 | CTCGAAAGAAACAGGATGGGGTTGTTAGCACCTTCCATCATTTATTT                        | 4493 | 뮹  |
| 2292 | CCAGGAAAAAACAAGAAGGTATCGTTGGCAGTTCTCGGGTGTGTTTTGCACAGCACACCC           | 2233 | δÃ |
| 4492 | 4433 AGTCCCAAAGACTTGTGGGCTTTGTCCTCCGAAGAGATCTCATTATTTCAATTGAAAATG      | 4433 | 망  |
| 2232 | 2173 AATCTCAGAGATTAGTGGGATTTGCCCTCAGAAGAGACCTGACAATTGCAATAGAAAGTG 2232 | 2173 | Qγ |

Search completed: May 15, 2003, 03:00:04 Job time : 821 secs

